

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 14 DEC 2005

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| Applicant's or agent's file reference P24507PC | FOR FURTHER ACTION See Form PCT/IPEA/416 | |
| International application No. PCT/NO2004/000355 | International filing date (day/month/year) 19.11.2004 | Priority date (day/month/year) 25.11.2003 |
| International Patent Classification (IPC) or national classification and IPC See Supplemental Box | | |
| Applicant VIKING ENGINEERING AS et al | | |
| <p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>4</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>2</u> sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p> | | |
| Date of submission of the demand 22.06.2005 | Date of completion of this report 24.11.2005 | |
| Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88 | Authorized officer Christer Bäcknert/MP Telephone No. +46 8 782 25 00 | |

Form PCT/IPEA/409 (cover sheet) (April 2005)

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/NO2004/000355

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of: Cover sheet

E21B 19/16 (2006.01)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/NO2004/000355

Box No. I Basis of the report

1. With regard to the language, this report is based on:

☒
☐

the international application in the language in which it was filed

a translation of the international application into _____,
which is the language of a translation furnished for the purposes of:☐
☐
☐

international search (Rules 12.3(a) and 23.1(b))

publication of the international application (Rule 12.4(a))

international preliminary examination (Rules 55.2(a) and/or 55.3(a))

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*☐
☒

the international application as originally filed/furnished

the description:

pages 1 - 9 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☒

the claims:

pages _____ as originally filed/furnished

pages* _____ as amended (together with any statement) under Article 19

pages* 1 - 2 received by this Authority on 22.06.2005

pages* _____ received by this Authority on _____

☒

the drawings:

pages 1 - 7 as originally filed/furnished

pages* _____ received by this Authority on _____

pages* _____ received by this Authority on _____

☐

a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:☐
☐
☐
☐
☐

the description, pages _____

the claims, Nos. _____

the drawings, sheets/figs _____

the sequence listing (*specify*): _____any table(s) related to the sequence listing (*specify*): _____4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).☐
☐
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☐

the description, pages _____

the claims, Nos. _____

the drawings, sheets/figs _____

the sequence listing (*specify*): _____any table(s) related to the sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/NO2004/000355

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|------------|-----|
| Novelty (N) | Claims | <u>1-9</u> | YES |
| | Claims | | NO |
| Inventive step (IS) | Claims | <u>1-9</u> | YES |
| | Claims | | NO |
| Industrial applicability (IA) | Claims | <u>1-9</u> | YES |
| | Claims | | NO |

2. Citations and explanations (Rule 70.7)

Documents cited in the International Search Report:

D1: US2923192 A

D2: US4309922 A

D3: WO0151763 A1

The cited documents represent the general state of the art. The invention defined in amended claims 1- 9 is not disclosed by any of these documents.

The cited prior art does not give any indication that would lead a person skilled in the art to the claimed power tong for use during installation and dismantling of pipes when drilling in the ground. Therefore, the claimed invention is not obvious to a person skilled in the art.

Accordingly, the invention defined in claims 1- 9 is novel and is considered to involve an inventive step.

The invention is industrially applicable.

C l a i m s

1. A power tong for use during installation and dismantling
of pipes when drilling in the ground, such as is known
from e.g. petroleum production, comprising a drive ring
5 (30) and at least one clamping device (40), where the
clamping device (40) is arranged to grip a pipe string
(20), the power tong (2) being equipped with a driving
mechanism (32, 34) for rotation of the clamping device
(40) about the longitudinal axis of the pipe string (20),
10 and where the clamping device (40) communicates with a
fluid supply via a swivel ring (60) that encircles the
drive ring (30), c h a r a c t e r i z e d i n
that a plurality of clamping devices (40) are gathered in
a group (38), where the group (38) with clamping devices
15 (40) are removable from the drive ring (30).
2. A power tong (2) in accordance with Claim 1,
c h a r a c t e r i z e d i n that the drive ring
(30) is undivided.
3. A power tong (2) in accordance with Claim 1,
20 c h a r a c t e r i z e d i n that the clamping
device (40) is constituted by a clamp, the clamp (40) be-
ing provided with at least one piston (46) in a cylinder
(44), the piston (46) communicating with the fluid supply
via the swivel ring (60) that encircles the drive ring
25 (30).
4. A power tong (2) in accordance with Claim 3,
c h a r a c t e r i z e d i n that the cylinder
(44) and the piston (46) are double acting, the plus side
of the piston (46) communicating with a first passage
30 (63) in the swivel ring (60) and the minus side of the

piston (46) communicating with a second passage in the swivel ring (60).

- 5 5. A power tong (2) in accordance with Claim 3,
c h a r a c t e r i z e d i n that the gripping
portion of the clamp (40) includes a removable gripper
(56).
6. A power tong (2) in accordance with Claim 1,
c h a r a c t e r i z e d i n that the power tong
(2) forms a joint assembly (1) with a back-up tong (4).
- 10 7. A power tong (2) in accordance with Claim 6,
c h a r a c t e r i z e d i n that the power tong
(2) together with the back-up tong (4) can be displaced
vertically along at least two guide columns (10).
- 15 8. A power tong (2) in accordance with Claim 7,
c h a r a c t e r i z e d i n that the guide col-
umns (10) are disposed on diametrically opposite sides of
the pipe string (20).
- 20 9. A power tong (2) in accordance with Claim 6,
c h a r a c t e r i z e d i n that the space be-
tween the power tong (2) and the back-up tong (4) is
shielded by a collecting bellows (90).